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Towards a Sustainable Institutional Arrangement for USOs in China: Current Status, Support Mechanisms, and Regulatory Governance

ABSTRACT: The telecommunications industry in China has been experiencing drastic restructuring and exponential growth over the last two decades. Digital divides, however, are now broadened among various groups, particularly between urban and rural areas. These divides pose an impediment to the goal of a harmonious society as well as the Communist Party of China's recent ideology of building "Socialist New Villages." This paper starts with a brief account of the current status of universal service regulation and the unique circumstances surrounding China. Next, this paper explores what seems to be a sustainable institutional arrangement for universal service obligations ("USOs") in China in the aftermath of China's accession into the WTO. Solutions to policy questions regarding support mechanisms, regulatory governance, and the government's role in each are identified. The paper concludes that the uniqueness of China's circumstances requires a similarly unique solution to the USO issue. While a universal service fund ("USF") has been a standard and successful mechanism elsewhere in the world, it is probably currently unsuitable for China. Instead, a regulatory approach featuring a "non-subsidy" policy can serve both interim and long-term goals, and a regulatory governance system featuring a "joint-committee" with members from various stakeholders can be one key solution to addressing coordinative and agency problems.

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I. BACKGROUND AND STATUS QUO

A. THE COUNTRY

China is one of the most ancient nations in the world. China is also a developing country with a land mass of 9.6 million square kilometers, roughly one quarter of the Asian land area, ranking it the third largest country on the planet.¹ The physical topography of the land forms three ladders descending from west to east. These ladders are diversified in terms of not only land terrain, but also socio-economic development, weather conditions, and density of population.² The mountain and plateau areas that cover roughly 70% of the country account for 66% of the land surface and are primarily concentrated in western China. There are thirty-one provinces (including municipalities directly controlled by the central government and autonomous regions) and fifty-six ethnic nationalities with a total population of roughly 1.3 billion (as of 2005),³ skyrocketing from 0.45 billion in 1949 when the People's Republic was established.⁴ There are 732.7 thousand rural administrative villages consisting of 5 million "natural" villages. These villages contain 210 million rural households and a rural population of 745 million, which accounts for 57% of the total population.⁵ The exponential population growth was curbed by the "Family Planning" program launched in the 1970s.⁶ However, due to the large population base already formed, China's population will still be growing at a high speed until 2050.

¹ See, e.g., Web site of the Central People's Government of the People's Republic of China <http://www.gov.cn/> (in Chinese) and <http://english.gov.cn/>. See also, e.g., the Official News Web site of the State Council News Office of China, <http://www.china.com.cn> and <http://www.china.org.cn/english/index.htm> (accessed Nov. 23, 2006).

² *Id.*

³ See, e.g., National Bureau of Statistics of China, "China Statistical Yearbook 2005," http://www.stats.gov.cn/tjgb/ndtjgb/qgndtjgb/t20060227_402307796.htm, and <http://www.stats.gov.cn/tjsj/ndsj/2005/indexeh.htm> (in Chinese, accessed Nov. 23, 2006).

⁴ *Id.*

⁵ *Id.*

⁶ Central People's Government Population Growth and Family Planning, http://www.gov.cn/test/2005-07/26/content_17364.htm (in Chinese, accessed Nov. 23, 2006).

During the past century, foreign invasions and civil wars drove China into a deep economic depression and to the social turbulence that lasted until the end of 1970s when the “Cultural Revolution” officially ended.⁷ Since then, the Communist Party of China (“CPC”) adopted a reform and opening-up policy. The CPC decided in 1992 to construct the so-called “Socialist Market Economy with Chinese Characteristics,”⁸ which resulted in an exponential influx of foreign capital and extensive reforms of SOEs (state-owned enterprises). Mainland China’s gross domestic product (“GDP”) has grown at an annual rate of 9% since 1978 (when the reform and opening-up policy were initiated) to USD 2279 billion as of 2005, with a per capita GDP of USD 1753.⁹ Nevertheless, marked gaps in income exist between urban and rural areas as well as between different regions. Until 2005, average annual disposable income per capita for rural areas was USD 407 and USD 1311 for urban areas. GDP per capita is much higher in relatively developed regions, e.g., Beijing has reached USD 5457, whilst in some extremely deprived areas annual household income is under USD 50.¹⁰

The government is comprised of the State Council, the National People’s Congress, and the National People’s Political Consultative Congress, all of whom report to CPC.¹¹ Hong Kong and Macao were reunited with the mainland in 1997 and 1999, respectively. Currently, the mainland economy is largely government-dominated in terms of ownership as well as political intervention.¹² In the aftermath of entry

⁷ Central People’s Government History, http://english.gov.cn/2005-08/06/content_24233.htm (accessed Nov. 23, 2006).

⁸ Jiang Zemin “Speed-up the Steps in Reform, Opening-up and the Construction of Modernization to Achieve More Triumphs in the Cause of Building Socialism with Chinese Characteristics” (speech, First Session of the CPC’s 14th Congregation, October 12-18, 1992), http://news.xinhuanet.com/ziliao/2003-01/20/content_697148.htm (in Chinese); CPC Central Committee, “The Decision on Various Issues Concerning Building Socialist Market Economic System” (official document, 3rd Session of the 14th Congregation of the CPC, November 11-14, 1993), <http://www.people.com.cn/GB/shizheng/252/5089/5106/5179/20010430/456592.html> (in Chinese).

⁹ National Bureau of Statistics of China, “China Statistical Yearbook 2005,” *supra* note 3. The author uses a nominal exchange rate of 8:1 here to convert the original RMB amount to the USD figure.

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.* (government ownership accounts for roughly three quarter of the national capital stock).

into the WTO in 2002, China's government is now taking more initiative in further advancing economic reform and liberalizing networked industries such as telecommunications, civil aviation, railroad transportation, energy, and power.

B. TELECOM REFORM AND MARKET ENVIRONMENT

China initiated telecommunications deregulation in 1993, first through the "opening up part of the [value-added service ("VAS")] for competition" and then through the 1994 incorporation of China Unicom.¹³ These actions were catalysts for the beginning of a series of drastic structural changes and a governance transition that roughly fell into three phases.

The *first phase* was signaled by the initial opening-up in 1993 and is further symbolized by the entry of China Unicom in 1994.¹⁴ In 1993, the former Ministry of Posts & Telecommunications ("MPT") deregulated "nine non-basic telecom services [that encompassed] radio paging, 800 MHz trunk telephone service, 450MHz radio mobile communications service, domestic VSAT service, telephony information service, computer information service, electronic mail, electronic data interchange, videotext, and other services at the MPT's discretion."¹⁵ Further, "[a]s a result, many small companies piled into this lucrative market and grew rapidly."¹⁶ The paging industry can serve as an example as it was saturated within a few years of its initial appearance.

"Following deregulation, China Unicom was formally incorporated in 1994. The former Directorate General of Telecommunications [("DGT")] of the MPT was also [incorporated] as a company under the

¹³ Jun Xia, "Head-to-Head or Hand-in-Hand: Does Structural Reform Have Led to Meaningful Competition in China?" (paper presented at the 34th Telecommunications Policy Research Conference, George Mason University Law School, Arlington, Virginia, USA), September 29-October 1, 2006), <http://web.si.umich.edu/tprc/papers/2006/586/Head-to-Head%20or%20Hand-in-Hand.pdf> (accessed Jan. 7, 2007): 2.

¹⁴ See *id.* See also Jun Xia & Ting-jie Lu, "Universal Service Policy in China: Building Digital Bridge for Rural Community" (paper presented at the 33rd Telecommunications Policy Research Conference, George Mason University Law School, Arlington, Virginia, USA, September 23-25, 2005); Guangbin Zhou, *Reflections on China's Telecom Reform*, Communication Information News (Tong Xin Xin Xi Bao), July 3, 2002, <http://tech.sina.com.cn/it/t/2002-07-04/124204.shtml> (in Chinese).

¹⁵ See Xia, "Head-to-Head or Hand-in-Hand," *supra* note 13, at 3.

¹⁶ *Id.*

name of China Telecom.”¹⁷ China’s government intended this registration to be an initial step in separating government function from business operation, thus ending up with a duopolistic telephony market (“though China Unicom later found that it was actually competing with the regulator”).¹⁸ China Unicom, a share-holding company, holds “investments from the former Ministry of Electronic Industry [(“MEI”)], the Ministry of Railway, the Ministry of Electrical Power, and 13 other large-scale state-owned institutions,” including the Chinese Academy of Science.¹⁹ As for China Telecom, it did not provide services or actually own any networks. Moreover, “the national network, including three international gateways at that time, [was] owned and operated by provincial or municipal Posts & Telecommunications Administrations (“PTAs”) [reporting] directly to the MPT.”²⁰ Hence, the MPT still retained “a dual status as both regulator and operator. [This] left China Unicom at a very unfavorable position . . . as it was de facto competing with the regulator, i.e., the MPT.”²¹

This paradox lasted until 1998 when the *second phase* of telecom reform was entered into by way of a new round of government reform; the reform was launched to further separate government and business and to reinforce industrial regulation.²² In one such action, “the former MPT and MEI were merged into the Ministry of Information Industry (MII).”²³ This was accompanied by both the split of China Telecom into four service-specific companies and the entry of China Netcom and China Railcom into the industry, thus creating a telecom market featuring six service-specific companies.²⁴ Competition was still limited, however, “largely due to the longtime ambiguity of government-business relations.”²⁵

¹⁷ *Id.* at 4.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ See Xia, “Head-to-Head or Hand-in-Hand,” *supra* note 13, at 4.

²² *Id.*

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.* at 5.

In 2002, in the wake of China's entry into WTO, the MII undertook its most ambitious maneuver in further breaking up China Telecom into two companies, i.e., the "South" and the "North." The South company was branded China Telecom, and the North company was branded China Netcom.²⁶ The former China Netcom was integrated as one of the new China Telecom's subsidiaries, marking the *third phase* of the telecom reform.²⁷ Competition now is supposed to take place not only among long-distance carriers but also among local operators and across services. At the present moment, the deployment of third generation mobile ("3G") and full-service operations is believed by the Chinese government to be a source of corporate competence for the telecom industry, and a new round of market restructuring is allegedly in the pipeline.²⁸

Over the last decade, structural reform in China's telecom industry has been followed by profound changes in market environment, corporate governance and the competitive behavior of firms, as well as industry performance. After a series of divestitures, breakups, and consolidations beginning in 1994, the Chinese telecom industry has emerged from regulated monopoly into regulated oligopoly featuring six players.²⁹ All of these players are defined as "gigantic state-owned enterprises" ("GSOEs") that are under direct supervision of the national State-owned Assets Supervision and Administration Commission ("SASAC").³⁰ All six carriers are government-dominated

²⁶ *Id.*; State Council of China, *The Planning on Telecommunications' System Reform*, State Council Order No. 36, Dec. 11, 2002.

²⁷ See Xia & Lu, "Universal Service Policy in China," *supra* note 14; see also Zhou, *Reflections on China's Telecom Reform*, *supra* note 14.

²⁸ See, e.g., Ligang Xiang, *A Cold Reflection on Telecom Restructuring*, Communications World (Tong Xin Shi Jie), Nov. 31, 2005.

²⁹ The six carriers (or "Coms") include three wireline license holders (China Telecom, China Netcom, and China Railcom), two wireless operators (China Mobile and China Unicom), and one satellite carrier (China Satcom). This does not include the Radio, Film and Television ("RFT") network. See, e.g., Xia, "Head-to-Head or Hand-in-Hand," *supra* note 13, at 5.

³⁰ According to the Chinese government, the national State-owned Assets Supervision and Administration Commission of the State Council (SASAC) assumes several regulatory functions. First, it performs the responsibility of the investor as it guides and pushes forward the reform and restructuring of state-owned enterprises; supervises the preservation and incrementing of the value of state-owned assets for enterprises under its supervision, and enhances the management of state-owned assets; advances the establishment of modern enterprise system in SOEs and perfects corporate governance; and propels the strategic adjustment of the structure and layout of the state economy. Second, it dispatches supervisory panels to some large enterprises on behalf of the state and takes charge of daily management

with state majority ownership.³¹ Consequently, business conduct has changed, sometimes leading to weakened competition. Telecom operators remain subject to substantial intervention when making business decisions in many areas, including pricing.³²

Although structural reform has been followed by quickened network deployment and enhanced service availability, this rapid expansion and technological adoption might be attributable to some other forces as well. Such forces may include government-sponsored investment as well as management's intentions both to expand its power of control (by extending network coverage) and to bolster its job-approval ratings. Firms can sometimes go so far as to pay less attention to the call of the industrial regulator (i.e., MII) while paying more heed to the state-asset administrator (i.e., SASAC). Part of the evidence can be found by looking at the firms' response to the VAP program (i.e., "Village Access Project," for detailed discussion, see part II (A)) run by the MII. The tasks of village connection distributed to the carriers to ensure 95% village penetration were supposed to be finished by the end of 2005; however, they were actually achieved only after strenuous coordinative efforts from the MII itself.³³

of the supervisory panels. Third, it appoints and removes top executives of enterprises, and evaluates their performances through legal procedures while either granting rewards or inflicting punishments based on their performances; establishes corporate executives selection system in accordance with the requirements of socialist market economy system and modern enterprise system; and perfects an incentives and restraints system for corporate management. Fourth, it supervises and administers the preservation and incrementing of the value of state-owned assets under the supervision of SASAC through statistics and auditing; establishes and perfects the index system of the preservation and increment of the value of state-owned assets and works out assessment criteria; and safeguards the rights and interests of the investor of state-owned assets. Fifth and last, it drafts laws, administrative regulations of the management of the state-owned assets, and draws up related rules; and directs and supervises the management work of local state-owned assets according to the law. See, e.g., State-owned Assets Supervision and Administration Commission of the State Council, People's Republic of China, [http://www.sasac.gov.cn/\(in Chinese\)](http://www.sasac.gov.cn/(in Chinese)) and http://www.sasac.gov.cn/eng/eng_index.htm (accessed Jan. 7, 2007).

³¹ See companies' websites for information about holding structures.

³² See, e.g., Ministry of Information Industry (MII), Notice, *On Further Reinforcement in Regulating Telecom Tariffs* (jointly issued by MII and National Development and Reform Commission), No. 204 (2004).

³³ Ministerial officials had to personally lobby around the country to emphasize the significance of the Project and leverage all possible resources to fulfill the goal of ensuring 95% administrative-village-penetration by the end of 2005. See, e.g., Guohua Xi, "Speech at the Sichuan National Special Work-Meeting on the Village Access Project" (speech, Special Meeting on VAP, Si Chuan, 2005), http://www.mii.gov.cn/art/2005/12/11/art_991_490.html (in Chinese).

Genuine competition cannot develop alone within a single sector without the establishment of a general market system. This is particularly true when telecom companies are assuming confused roles as rivals, partners, and siblings, leading to even more confused market behavior. The evolution of meaningful competition in this sector is still a long way out. This situation more or less explains how the processes of policy-making and the implementation of universal service obligations (USOs) have evolved. Both the considerations of competition in, and state dominance of, the sector would play important roles, which in a sense prescribes the formula of what seems to be the pragmatic USO regulatory regime in China. It is therefore reasonable to predict that the emerging universal service regulatory regime in China would be a hybrid of general market principles with China's unique circumstances.

The impact of the regulatory transition for universal service should not be underestimated. Before 1994, Chinese telephony sector was first monopolized by the DGT, and then by China Telecom.³⁴ With a mandate from the central government, DGT and China Telecom were providing universal services through internal cross-subsidization. In a competitive market, however, the provisioning of universal service is prone to market failure as businesses seek to maximize return on investment. A thorough reexamination of the universal service regime is therefore needed.

C. UNIVERSAL SERVICE TELEPHONY SERVICE: A CENTURY OF COMMITMENT

As of June 2006, the national number of telephony subscribers was 791 million, of which 365 million were landline users³⁵ and the remaining 426 million were cellular subscribers. The national average fixed- and mobile-phone penetration was 28% and 32.7%, respectively.³⁶ While the telecom industry has witnessed exponential growth over the last two decades, digital divides have broadened

³⁴ Ministry of Information Industry (MII), *China Communications Yearbook 2004* (Beijing 2005).

³⁵ The figure of "wireline" users here is inclusive of wireless users subscribed with the "Little Smart" (or "XiaoLingTong") network that is classified by MII as "wireline" for regulatory discretion.

³⁶ Ministry of Information Industries (MII), http://www.mii.gov.cn/art/2006/07/24/art_27_19868.html (in Chinese, accessed Jan. 7, 2007). The penetration data used here is that of the previous year.

among various groups, particularly between urban and rural areas. This breadth becomes a “Fourth Gap” in addition to the conventional “Three Gaps.”³⁷ In general, the average level of household income and per-hundred-inhabitant-telephone-penetration in urban areas compared to those in rural areas is roughly three to one.³⁸ Disparity exists not only between rural and urban sectors, but also amongst different regions. Table 1 displays the differences between the Eastern, Central, and Western regions in terms of telephone penetration.

Table 1: Telephone Penetration: A Cross Regional Comparison (in Per-Hundred-Inhabitants as of June 2006)³⁹

	Wireline telephone penetration	Urban wireline penetration (2005 statistics)	Rural wireline telephone penetration	Wireless telephone penetration
National average	28.0	40.3	21.7	32.7
Eastern region	40.8	45.3	30.6	50.2
Central region	22.9	32.2	19.1	24.9
Western region	20.1	40.7	15.3	23.9

³⁷ The “Three Gaps” used to be used as a general abbreviation of the gaps between the urban areas and rural areas, industrial workers and agricultural farmers, and intellectuals and physical laborers. See, e.g., Yi Li, “Chinese Social Stratification and the Cadre System: 1959-1979,” chap. 4 in *The Structure and Evolution of Chinese Social Stratification* (Landham, MD: University Press of America, 2005).

³⁸ Ministry of Information Industry, *supra* note 36; National Bureau of Statistics of China, “China Statistical Yearbook 2005,” *supra* note 3.

³⁹ Eastern region includes provinces of Beijing, Tianjin, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan; central region includes provinces of Hebei, Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, and Hunan; western region includes provinces of Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shan’xi, Gansu, Qinghai, Ningxia, and Xinjiang. See, e.g., Ministry of Information Industry, *supra* note 36.

Roughly half a century ago, the CPC created a blueprint for its people, promising them a life of “upstairs and downstairs, electric lights and telephony”⁴⁰ in the near future. While this blueprint has been realized to a certain extent in the city households, rural areas have remained poor in terms of the availability of telecom services. Thus, providing rural communication is emerging as a serious challenge to the Chinese government in its effort to bring the sector and the economy to a new level of reform. This disparity, however, is not necessarily incompatible with the goal of a harmonious society and the Party’s recent ideology of building “Socialist New Villages,” which includes addressing properly the “Three Agrarian Issues.”⁴¹

The developmental impact of telecommunications on rural areas has been widely reported.⁴² While the political and economical rationales for providing universal service can vary across nations, the mission faced by China’s government has a unique historical context. The success of the CPC’s revolution that took place half a century ago is attributed to the compassionate participation of farmers wishing to acquire an equitable social status and improving their living condition. The gaps between the urban and the rural areas, particularly those in the “old, ethnic, remote, and deprived” areas, have become spotlights gradually drawing intensive public attention.⁴³ The existence of the

⁴⁰ “Upstairs and downstairs; electric lights and telephones” has been a buzzword for about half a century in ordinary Chinese, particularly among people in rural areas. It used to be a vivid description of what a happy life has to offer, although nowadays what people pursue in China is quite beyond that. See, e.g., Xia & Lu, “Universal Service Policy in China,” *supra* note 14.

⁴¹ Refers to the developmental issues concerning “Agriculture, Villages, and Farmers,” all of which start with a “Nong” in Chinese pronunciation. See CPC Central Committee and State Council, “Suggestions on Various Issues Regarding the Promotion of Farmers’s Income Growth,” *People’s Daily* (February 9, 2004), <http://www.people.com.cn/GB/jingji/1037/2325995.html> (in Chinese).

⁴² Heather E. Hudson, *When Telephones Reach the Village: The Role of Telecommunications in Rural Development* (New Jersey: Ablex Publishing Corporation, 1984); Heather E. Hudson, “From African Village to Global Village: Lessons in Bridging the African Digital Divide” (Paper presented at the 28th Telecommunications Policy Research Conference, September 23-25, 2000), <http://www.tprc.org/abstracts00/africanvillage.pdf>.

⁴³ The first word “old” refers to the areas that hosted the CPC’s revolution in its early stage, especially before the second civil war with Kuomintang; “ethnic” refers to the areas of ethnic minority that are usually located in relatively underdeveloped regions; “remote” refers to the areas distant from major cities; “deprived” refers to the areas that are extremely underdeveloped and poor. See, e.g., Hequan Wu, “Constructing A Harmonious Society, Recognizing the Fundamental Significance of Rural Communications,” *China Information Times* (*Zhong Guo Xin Xi Jie*), No. 17 (September 17, 2005), http://www.cctl.cn/zcfg/zcyj/t20060210_113664.htm (in Chinese).

gaps is supposed to impair social harmony as well as long-run development in China. Therefore, the new generation of CPC's leadership has promulgated the "Three Represents"⁴⁴ as the guiding party doctrine and put the "Three Agrarian Issues" at the top of the party agenda, along with the previously mentioned concept of building "Socialist New Villages."

The barriers for rural connection can be substantial in China. The rural villages that are still unconnected are mostly located in remote areas with complex physical geography, extreme weather, and low population density. This can translate into high costs for network construction and maintenance. Moreover, it is not easy to connect these areas through the extension of existing networks. Hence, the cost can sometimes go as high as USD 122,000 for connecting only one telephone line under currently available technologies.⁴⁵ Thus far, not a single so-called rural technology has been able to demonstrate superiority in both technological and economical terms for use in rural China. Current wireline technologies such as cable are high in cost for rural areas, and even technologically infeasible in some areas. Wireless technologies such as Global Standard for Mobile ("GSM"), Code Division Multiplexing Address ("CDMA"), and Very Small Aperture Terminal ("VSAT") are also expensive. Satellite technology seems to be a better alternative for areas with extremely low population density. However, there are demonstrable constraints in practice due to technological immaturity and limited transmitting capacity. In addition, the condition of parallel infrastructures such as power, road, and water are usually poor in rural areas, driving the maintenance costs even higher. On the demand side, farmers in many rural areas are still not accustomed to reaching out through

⁴⁴ Refers to the visionary objectives of the party to "represent the development requirement of advanced productive forces, the most advanced cultural trend, and the fundamental interest of the people." The "Three Represents" doctrine has been compulsorily integrated into curricula of secondary and higher education nationwide. See Jinag Zemin, Speech at the Celebration of the 80th Anniversary of the CPC, Beijing, July 1, 2001, <http://www.cctv.com/special/733/-1/47001.html> (in Chinese); and People's Daily, Comment (*Let the Important Thought of 'Three Represents' Enter Textbook, Classroom, and Student's Brain and Become Contemporary Young Students' Guideline and Spiritual Power Engine*), *People's Daily* (Ren Min Ri Bao) (November 26, 2003), <http://www.people.com.cn/GB/paper464/10731/975353.html> (in Chinese).

⁴⁵ Jinliang Li, "Wireless Access is the Optimal Technological Solution for Telecommunications Universal Service," *People's Posts & Telecommunications* (Ren Min You Dian), April 25, 2003, <http://www.cnii.com.cn/20030526/ca157905.htm> (in Chinese).

telecommunications.⁴⁶ Evidence shows telephones installed in rural households are largely used for receiving calls from family members working in urban centers.⁴⁷ As a result, the average number of inbound calls is roughly three times as large as that of outbound-calls in those areas.⁴⁸

Before 1998, rural communication had witnessed a period of rapid growth, particularly from 1995 through 1997. This growth was supported by the internal cross-subsidization mechanism of the former wireline monopolist—the previous China Telecom.⁴⁹ The introduction of competition and removal of the initial access charge as a direct result of government reform in 1998, however, have led to the end of cross-subsidization. The result is that the former China Telecom slowed down the pace in investment in rural networks. Annual growth of rural connections in terms of village telephone penetration plummeted from 10% before 1999 to 2% afterward.⁵⁰ The former China Telecom was allegedly frustrated by tremendous business losses incurred in providing telephone services to rural areas. The total amount of loss in five relatively developed provinces (Guangdong, Shanghai, Jiangsu, Zhejiang, and Shandong) rose from USD 1793 million in previous years to USD 2244 million in 2001.⁵¹

In 2000, the *Telecommunications Regulations*⁵² was issued by the central government.⁵³ Although the USOs on carriers are stipulated in Article 44 of Chapter 2 of the *Regulations*, it does not specify the

⁴⁶ See, e.g., Ministry of Information Industry, *China Communications Yearbook 2004*, *supra* note 34.

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² The Chinese government is now considering formulating its first-ever Telecommunications Act. An advisory board of 26 expert members has been formed to provide advisory support to the MII (the de facto act writer). See, e.g., Xinhua Net, "Draft Telecom Act Comes out with Four Focuses to Be Addressed," News.cn, March 3, 2004, http://news.xinhuanet.com/it/2004-03/03/content_1342343.htm (in Chinese, accessed Nov. 13, 2006).

⁵³ State Council, *Telecommunications Regulations of the People's Republic of China*, Order No. 291, September 25, 2000, <http://tech.sina.com.cn/it/telecom/2000-09-30/38217.shtml> (in Chinese).

objectives or even support mechanisms and governance. Therefore, a “regulatory vacuum” regarding universal service has emerged. As a result, no carriers care to provide rural services. Some remote areas that were originally connected even reverted to disconnection when losses piled up. An explicit universal service regime remained elusive.

II. PROBLEMS WITH CURRENT REGIME

A. KICK-OFF OF THE VILLAGE ACCESS PROJECT

To address the pressing issue of rural communications, the MII launched the “Village Access Project” (“VAP”) in 2004.⁵⁴ As a result, 40,000 administrative villages nationwide were connected by the end of 2005. The result was a rise in the per-hundred-administrative-village telephone penetration from 89% before the Project to more than 97% after the Project.⁵⁵ Now the CPC is mobilizing the country to launch its 11th Five-Year-Plan (“FYP”), part of which includes elevating the national village telephone penetration rate to 100%.⁵⁶ The 11th FYP is intended to mark the beginning of the transition from the concept of community access to a new level of universal service. This new level includes the adoption of the concept of household-based-penetration in relatively developed areas as well as the pursuit of national informization goals.⁵⁷ Echoing the CPC’s Central Committee and the State Council on “The Promotion of the Establishment of Socialist New Villages”⁵⁸ for the 11th FYP, in early 2006 MII promulgated the “Suggestions on the Promotion of the

⁵⁴ Ministry of Information Industry (MII), Notice, *Rural Communications Universal Service—A Guideline to the Implementation of the Rural Access Project*, Jan. 16, 2004, http://www.mii.gov.cn/art/2005/12/29/art_992_4083.html (in Chinese).

⁵⁵ Ministry of Information Industry (MII), Briefing on the VAP, *Concluding Meeting of 2005 on the VAP was Held in Yan'an, Shan'xi*, Briefings No.7 (2005), http://www.mii.gov.cn/art/2006/01/06/art_990_4764.html (in Chinese).

⁵⁶ 98.6% and 100% by the end of 2006 and 2007, respectively.

⁵⁷ Ministry of Information Industries (MII), *The MII Sets Forth New Goal for the VAP in 2006*, http://www.mii.gov.cn/art/2006/02/23/art_990_7047.html (in Chinese, accessed July 1, 2006).

⁵⁸ CPC Central Committee & State Council, “Suggestions on the Promotion of the Establishment of Socialist New Villages” (official document, the 5th Session of the CPC’s 16th Congress, 5th sess., 2005), http://www.gov.cn/jrzq/2006-02/21/content_205958.htm (in Chinese).

Establishment of Socialist New Villages”⁵⁹ (hereinafter “Suggestions”). The “Suggestions” marks a new level of effort to address the “Three Agrarian Issues.” The “Suggestions” loosely outline the significance, guiding principles, objectives, implementation, and administrative measures of the ICT sector’s participation in the nationwide “Socialist New Villages” drive.

In the absence of an explicit universal service regime, the VAP has been serving as a useful platform since its inauguration for implementing USOs in China. Following the Chinese government’s longtime philosophy of “trial before action,” the VAP was initially launched in January 2004 on a trial basis in five provinces (Shan’xi, Inner Mongolia, Sichuan, Guangxi, and Henan). It was expanded later in the middle of 2004 to enlist another eight provinces (Gansu, Jiangsi, Hebei, Hunan, Guizhou, Qinghai, Xinjiang, and Ningxia). After two phases of trial implementation, the VAP was officially launched on a full scale in early 2005. According to the State Council and MII, a new plan is now in the pipeline to move on to the next stage of universal service efforts that will integrate Internet deployment in rural areas into its objectives.⁶⁰

While administration of the VAP is primarily the MII’s responsibility, participation from local government is also expected. There is a division of responsibilities between the MII and provincial communications bureaus (“PCBs”) in this regard. Under the direct supervision of a deputy minister of the MII, the Department of Telecommunications Regulation (“DTR”) of the MII acts as the specific acting body. The PCBs take charge of daily supervision and evaluation of developments in the VAP programs, within their jurisdictions, as well as leveraging other local government agencies for assistance in terms of capital investment and supportive taxation policy.⁶¹

Technologically, carriers are encouraged to first consider the expansion of their existing networks. If proven indispensable, the application of wireless technologies, including satellite, will also be

⁵⁹ Ministry of Information Industry (MII), Notice, *Suggestions on the Promotion of the Establishment of Socialist New Villages*, No. 229 (2006), http://www.mii.gov.cn/art/2006/04/14/art_541_10682.html (in Chinese).

⁶⁰ Ministry of Information Industry (MII), *The MII Sets Forth New Goal for the VAP in 2006*, *supra* note 57.

⁶¹ Ministry of Information Industry (MII), Notice, *On the Full Rollout of the Village Access Project in the Year of 2005*, No. 55 (2005), http://www.mii.gov.cn/art/2005/12/29/art_992_4081_2.html (in Chinese).

permitted by the MII.⁶² Where wireless technologies are proven to be necessary, the MII would encourage the use of those with domestic proprietary intellectual property. SCDMA 400MHz, for example, commercially launched in the middle of 2004, fits the domestic profile and has been delivered by MII on many occasions.⁶³ The MII also provides privileges to those carriers who are, or will be, supplying services to rural areas for the use of radio spectrum unless the same spectrum is applied to a more important entity.⁶⁴ CDMA 450MHz, for example, has been allotted for military and public security applications and is therefore prohibited from civil applications by the carriers.⁶⁵ To ensure affordability of telephone services to already connected areas, the MII exercises a price cap regulation on the pricing of rural services. Tariffs on rural services should not be higher than the carriers' existing tariff schemes.⁶⁶ Carriers are supposed to secure interconnection of the VAP programs with existing networks. These carriers are prohibited by rule from dismantling or disconnecting rural telephones for any excuse, including unpaid tariffs.

B. PROBLEMS AND DIFFICULTIES

Although it is generally unrealistic to expect China to adopt the kind of policy solution that would be characteristically imbedded in a market economy, there still exists some room for possible improvement in the present regime. As an interim arrangement, the VAP serves the government's short-term objective well, however, problems remain. In addition to the absence of a long-run objective and an explicit support mechanism, the present regime has demonstrated a number of other drawbacks or deficiencies in terms of its unsustainability, inconsistency, fragmented governance, and unattended agency problems; all of these drawbacks have been

⁶² *Id.*

⁶³ See, e.g., Xi, Speech, *supra* note 33; Jinsheng Su, "Speech at the National Special Work-Conference on the Village Access Project" (speech, Special Meeting on VAP, Sichuan, China, 2005), http://www.mii.gov.cn/art/2005/12/29/art_991_4080.html (in Chinese).

⁶⁴ Ministry of Information Industry (MII), Notice, *On the Full Rollout of the Village Access Project*, *supra* note 61; Xi, Speech, *supra* note 33.

⁶⁵ See, e.g., Xi, Speech,, *supra* note 33; Su, Speech, *supra* note 63.

⁶⁶ Ministry of Information Industry (MII), Notice, *Rural Communications Universal Service*, *supra* note 54.

compromising the execution of the Project itself. For example, without funding, major carriers are used to choosing a wait-and-see strategy toward their assigned tasks. This strategy was applied until substantial bureaucratic interventions began around the middle of 2005, a time when the deadline was closely approaching.

The VAP was devised and launched in the absence of an expressly defined universal service regulatory regime. Due to the possibility of both incentive incompatibility and ineffective governance, there is no sustainable guarantee for the objectives of universal service. In some areas where connections have been made, there is a tendency to fall back to disconnection because of alleged business loss. Meanwhile, the current method of assigning VAP tasks through the conventional governmental command chain is most likely causing hidden problems for the future implementation of USOs in China. For one thing, the approach currently used in task distribution may be creating rigidity instead of flexibility in the patterns of USO award mechanisms. Such rigidity would be detrimental to the possible competitive supply of universal service in the future. In addition, the government's role is not clearly defined, and the carriers' obligations are not strictly binding.

Central-local relations in terms of infrastructure investment in China have long been subtle.⁶⁷ Although participation from governments and carriers at both central and local levels are expected for the VAP, an effective institutional approach for coordination remains nonexistent. As divisions of provincial governments, PCBs report directly to MII. Much of the local assistance, such as the supportive taxation policy and the use of land and power, however, is supposed to be from other divisions of the local governments beyond the PCBs' reach. Meanwhile, the division of responsibilities between the central offices of the carriers and their provincial subsidiaries, with regard to USOs, are ambiguous. The VAP tasks were assigned to the central offices and, in turn, further distributed by the central offices to their provincial branches, based not on measurable variables such as revenues but mostly on geographical adjacency.⁶⁸ Therefore, disproportionate burdens arise among the branches of the GSOEs, which "has been one of the practical reasons for delay."⁶⁹ The central-

⁶⁷ See also Jun Ma, "Modeling Central-Local Fiscal Relations in China," *China Economic Review* 6 (1995): 105-136; Weiying Zhang, "Game Theory and Economics of Information" (in Chinese), at 90-97, *Shanghai People's Press* (1996).

⁶⁸ See also Xia & Lu, "Universal Service Policy in China," *supra* note 14, at 9.

⁶⁹ *Id.* at 10-11.

local conflicts are further fueled by the absence of an explicit support mechanism, for which the government cannot even provide a timetable. The enforcement of the VAP received resistance at the very beginning from carriers whose branches avowed a funding deficiency.⁷⁰

Without incentive compatibility and participation constraints, opportunistic behaviors such as suspension occurred among most carriers in the early stage of the VAP. For those provincial telecom branches who had been assigned the VAP tasks, one paradox faced by them was that the less developed the areas in which they were located, the more burdens they were forced to bear. This is because the VAP tasks are located mostly in relatively deprived areas but the distribution mechanism is based on geographical adjacency. Without funding in sight, the optimal strategy for these branches is simply to wait.⁷¹ Meanwhile, even though the MII is the primary agency responsible for the fulfillment of the administrative village-penetration goal, cooperation and assistance are also expected from other central government departments. However, due to pervasive, unattended agency problems within China's bureaucratic government, the attention has not been adequate.

Government-business relations in China have long been ambiguous. This ambiguity is unlikely to dissipate with the rollout of the VAP. The current institutional arrangement toward USOs lacks long-run sustainability in the course of market reform. Neither is the regime compatible with competition. This can lead to a number of hidden problems for emerging policy, particularly when there has existed a legacy of complicated interpersonal relations between regulatory officials and industry executives. In the meantime, the current six carriers are government dominated firms where ownership is highly concentrated.⁷² For this reason, among others, a business culture featuring entrepreneurship and professionalism remains elusive in this conventionally government-run industry. In addition to network externalities, unattended agency problems within SOEs can sometimes make necessary cooperation between carriers difficult to happen, even if it accords with the interests of all sides involved and society in general. The ownership system in China is not only

⁷⁰ *Id.* at 11.

⁷¹ The wait-and-see strategy adopted by provincial telecom branches can also be attributed to tacit collusion between the branches and their respective central offices.

⁷² See companies' annual reports.

impeding the future progress of market reform in the long-term, but it is also impairing the market-oriented execution of current rural access programs in the short-run.

While the difficulties described above only scratch the surface of the deficiencies underlying the present regime from a technical point of view, the fundamental causes are arguably rooted in the political foundation, and consequently, the legal and economic system. The VAP is implemented in the absence of general competition policy and sector-specific regulatory law. Hence, given China's unique condition, it is reasonable to forecast that there is a need for an integrated, rather than hodgepodge, approach in considering an emerging universal service regime.

III. THE IDEAL REGULATORY REGIME: SUSTAINABILITY AND CONSISTENCY

Support mechanisms and regulatory governance are two major issues in designing a universal service regime in China. Within these issues, sustainability and consistency are the two crucial hurdles to overcome. However, before addressing these, a systematic look must be taken at such things as the formula in designing USO programs, service definition, service targeting, and so on. In so doing, both the experiences of western countries and unique domestic conditions must be taken into account.

A. A FORMULA IN DESIGNING USO PROGRAMS

Access to telecommunications services increasingly sets the threshold for citizen participation in the democratic process and economic marketplace, as well as other social and cultural activities that enrich the quality of life. In one way or another, the need for the universality of telecom services derives from a person's ideal of equal access to the communication means that modern society has to offer. Universal service obligations form an integral part of a national telecommunications policy that has direct impacts on the market, technology, and investments. The pursuit of USOs thus comes from the goal of equity. This goal means promoting social parity in terms of equal access to telecom services. In recent years, universal service has also been believed to be efficiency-compatible in terms of positive network externalities and spill-over effects of telecom consumption.⁷³

⁷³ See, e.g., Nicholas Economides, "The Telecommunications Act of 1996 and Its Impact," *Japan and the World Economy* (paper presented at the Annual Telecommunications Policy

On the one hand, the welfare nature of USOs defines itself as a quasi-public good that cannot be efficiently supplied if left alone to market forces. On the other hand, the externalities and spill-overs effect can lead to inefficient supply of the services. This makes it the government's responsibility to adequately supply services through implementing a USO policy that can help ensure both availability and affordability of telecom services to a greater fraction of a population in a cost-effective fashion.

The deployment of telecommunications can stimulate, as well as be an indicator of, development. The construction of telecommunications networks in rural China has contributed remarkably to economic growth and social development. This justifies the argument that the diffusion of telecommunications is not only a mere trade-off between equity and efficiency, but also complementary to the two goals. In China, public attention to, and debate on, universal service issues is a recent event.⁷⁴ While consensus has been achieved on the necessity to provide universal service under a deregulated market, arguments are mainly focused on issues about the objectives, support mechanisms, and regulatory governance. To facilitate the policy goal, certain scientific decision-making processes need to be followed by China when formulating its USO programs. These processes may include the following steps:⁷⁵

- *Defining Objectives*: What is the objective of USOs in China? What are the rationales for the objective and does it fit the overall socio-economic development as well as national informization goals?

Conference, Tokyo, Japan), <http://www.stern.nyu.edu/networks/telco96.html> (accessed Dec. 29, 2006).

⁷⁴ See, e.g., Xiang Cai, *Costing of Universal Service and Its Implementation Under Competition* (in Chinese), report of Soft-Science Research Program Sponsored by the Ministry of Information Industry of China (1998), as referred to in Xia & Lu, "Universal Service Policy in China," *supra* note 14; Jun Xia, "Telecommunications Universal Service Policy: China vs Western Countries" (in Chinese), 14(4) *World Telecommunications (Shi Jie Dian Xin)* (Beijing: 2001), 3-9, as referred to in Xia & Lu, "Universal Service Policy in China," *supra* note 14.

⁷⁵ Based on Dr. Patrick Xavier, Organization for Economic Co-operation and Development ("OECD"), *Universal Service Obligations in a Competitive Telecommunications Environment* (Paris: OECD, 1995).

- *Identifying Barriers*: What are possible barriers to the defined objective of USOs? Apart from technological, economical, natural, and socio-cultural factors, are there any other factors that need attention?
- *Developing Alternative Solutions*: What are possible solutions to the barriers? What alternative universal service programs are possible? How will the current telecom regulatory regime affect the design of USO programs in China?
- *Evaluating and Deciding*: Which USO programs are the most cost-effective and practicable in China? Would they address the urgent needs in the short-run as well as the need to be competitively neutral in the long-run? What criteria should be considered in evaluating alternative USO programs?
- *Implementing and Controlling*: What is the most affective way to implement USO programs? Do the current regulatory governance system and the government's role have to be reevaluated? What are the implications do technological change and globalization have on the future universal service regime in China?

B. DEFINING BASIC SERVICES

Although countries may differ from one another in the specific objectives of their USOs, one common mission faced by all is to properly define the scope of universal services. Too broad of a scope may lead to much distortion while too narrow a scope cannot ensure the goal of maximum equity (and efficiency). For most of the 20th century, universal service meant voice grade access to the Public Switched Telephone Network ("PSTN"), including access to emergency and operator services, and directory assistance.⁷⁶ However, the emergence of advanced technologies and technological

⁷⁶ See, e.g., Colin R. Blackman, "Universal Service: Obligation or Opportunity?," *Telecommunications Policy*, no. 3 (1995): 171.

convergence in the end of last century has led to worldwide rethinking of universal service policy. The newly rethought policy would include most recent services, such as broadband and internet access. In defining the scope of basic services, the two major considerations are the status of socio-economic development and the national informization strategy.

Telecommunications have become so crucial to a nation's economic development, as well as its citizens' cultural inclusion, that every member and household of a society is entitled to share its benefits. However, due to such barriers as accessibility, affordability, and profitability, most rural communities are extremely underserved, particularly those in relatively less developed regions in China. For those individuals and households who currently have no access to any kind of telecom services, even the provisioning of standard telephony would bring meaningful change to their lives.⁷⁷ When defining the scope of services, value judgment, which can vary from country to country, plays an inevitable role. Given the current circumstances surrounding China, this definition of scope needs to meet the two following basic criteria:⁷⁸

- *Technologically*, services that come under USOs do not have to be the most advanced ones; instead, the scope should demonstrate a basic level of service that also responds to regional differences and uniqueness. The concept of universal service is evolving over time, resulting in different generations of universal service policy.⁷⁹ Although in principle, these services should be mature and currently used by the majority of people, it does not rule out the possibility of including "advanced service" such as Internet access. Such advanced services can also become "basic" and "mature" over time. Decisions on this matter rely heavily on a cost-benefit analysis, and the definition of scope of services is contingent

⁷⁷ See also Xi, Speech, *supra* note 33.

⁷⁸ See also Xia, "Telecommunication Universal Service Policy," *supra* note 74.

⁷⁹ See, e.g., Claire Milne, "Stages of Universal Service Policy," *Telecommunications Policy* 22 (1998): 775-780; Milton Mueller, "Universal Service and the New Telecommunications Act: Mythology Made Law," *Communications of the ACM* 40 (1997): 39-47.

upon the status of technological advancement and general economic development.

- *Economically*, the scope of services should be limited only to those services where market forces fail, when firms as profit-maximizers do not voluntarily opt to supply the services. When the services can be effectively supplied through the market, they should not be included in USO programs. In other words, the purpose of USO programs is to provide services to those groups who are underserved or un-serve under a deregulated telecommunications market where the provisioning of these services is justified in terms of both equity and efficiency considerations.

In spite of the laggard rural telephone access witnessed in China, it is still encouraging to see that radio and television have been made available to most rural areas, thanks largely to the CPC's ideological propaganda initiatives which leveraged decades-long joint efforts of the government, and sometimes, military units to extend radio and television coverage to "every corner" of China. Concurrently, the State Administration of Radio, Film and Television ("SARFT") is also running a "Village Access Project" that focuses on expanding radio and television coverage to rural villages.⁸⁰ This is done largely through satellite technology, though the available channels are still limited in some areas due to constraints in transmission capacity. Compared with radio and television, however, the diffusion of Internet service in rural China lags far behind the national average. Indeed, "despite efforts from relevant governmental agencies to call for urban businesses and individuals to help rural primary and middle schools go online," contributions to this sympathy project are far from adequate.⁸¹ Such inadequacy makes the provisioning of Internet service to rural areas another tough issue if Internet access is to be included in the universal service scope.

⁸⁰ See relevant materials under the same title "Village Access Project" at the official web site of the State Administration of Radio, Film and Television (SARFT) of China, http://www.sarft.gov.cn/downstage/page_161.jsp (accessed Nov. 20, 2006).

⁸¹ See also Xia & Lu, "Universal Service Policy in China," *supra* note 14, at 14.

C. TARGETING THE RURAL COMMUNITY

As mentioned above, while digital divides in China can also be identified based on other variables, rural communications have become the primary focus of the universal service effort.⁸² The degree of severity in the deprivation of telecommunications service from rural areas ascends from eastern, central, to western regions (see Table 1). Thus, priorities need to be placed accordingly. To summarize, the rationale for emphasis on rural access in China is multifold:

- *Politically*, the CPC put forward in the Sixteenth Congress the goal of establishing an equitable and harmonious society with a comfortable standard of living. The “Three Agrarian Issues” is supposed to be a focal point, a goal which has recently been expanded to a larger concept of building “Socialist New Villages.” To achieve this goal, the improvement of rural communications, among other things, was intended as a sign of the Party’s drive to address these issues.⁸³
- *Economically*, the growth of the agricultural industry is far behind other sectors in China largely due to insufficient technological innovation as well as inadequate infrastructure. This has become a major impediment to overall economic growth.⁸⁴ Rural economic growth responds heavily to infrastructure investments including telecommunications that have been regarded as an important engine for rural growth and development.

⁸² Ministry of Information Industry (MII), Notice, *Rural Communications Universal Service*, *supra* note 54.

⁸³ *Id.*

⁸⁴ During the 10th FYP, GDP growth per annum averaged about 9.5% while the same indicator for the agricultural sector is below 5%. According to the National Bureau of Statistics of China, value-added from primary industry (agriculture) in 2005 only accounts for 12.4% of the total economy, while the secondary and tertiary sectors accounts for 47.3% and 40.3%, respectively. See National Bureau of Statistics of China, “China Statistical Yearbook 2005,” *supra* note 3.

- *Additionally*, the development of urban and rural areas is interdependent, as a harmonious society and healthy economy can only be achieved through simultaneous development in both urban and rural communities.

In this context, the basic goal for China in its USO policy at its current stage is to ensure universal access to every rural community, which would mean accessibility of basic services to every “administrative” village rather than every “natural” village. The warranty for the concept of community access rather than per-hundred-inhabitant penetration at this point is reasonable when technology and market demand is considered, though political and ideological forces are now inclined to go even further to advocate a new round of large scale crusades to eventually deploy most ICT services to every corner of rural China.⁸⁵ According to estimates, about USD20 billion of infrastructure investment (assuming wireline technology is applied) is required to increase national rural per-hundred-household-penetration by only an extra two percentage points. This amount would skyrocket to USD2400 billion if access to every household was desired, even without considering time constraint.⁸⁶ Meanwhile, businesses are concerned with a return on investment (ROI) that is supposedly extremely modest or negative in rural areas.⁸⁷ It is therefore conceivable that local loops are also bottlenecks of universal service for rural regions. Consequently, there is a lack of both economic feasibility and political urgency for the government to take on household penetration as a current objective. In this sense, the objective (but not necessarily the regulatory regime) of the VAP has been pragmatic from the very beginning.

Emphasis on the concept of community access does not necessarily mean to overshadow the significance of nationwide informization objectives. The goal of community access can serve as a preliminary foundation, based on which more ambitious universal service efforts may be initiated. The concept of community access in China should

⁸⁵ Ministry of Information Industry (MII), *The MII Sets Forth New Goal for the VAP in 2006*, *supra* note 57.

⁸⁶ See also Li, “Wireless Access is the Optimal Technological Solution,” *supra* note 45.

⁸⁷ Ministry of Information Industry (MII), *China Communications Yearbook 2004*, *supra* note 34.

last for a long time in the foreseeable future;⁸⁸ this means that the definition of universality would be a community-based concept, whether it be through the servicing of plain-old telephone or Internet applications currently defined as advances services. In its 11th FYP, China's government set forth the objective of telephone access to every village of no less than fifty households and Internet access to every township.⁸⁹ This objective is both pragmatic and feasible based on current conditions as well as possible future changes in the market and future economic development. Putting aside possible future political dynamics, individual access to either telephone or Internet service in the near future (ten years or even beyond) in China should not be covered under regular USO programs, particularly if account is taken of the stage of general market development.

As far as community access is concerned, some practical issues may arise when it comes to specific locations where the recipients (village members) have difficulties accessing services. This concern is further highlighted by the fact that a number of unconnected villages are located in areas with extreme natural conditions and low population density.⁹⁰ According to the ITU universal access can be defined as telephone availability within twenty kilometers, or within a traveling distance of thirty minutes, or a telephone in every locality of more than five hundred people.⁹¹ In the case of China, for the convenience of administration and maintainability, telephone terminals can be installed at venues where village governments and/or village schools are located.⁹²

The adoption of the community access concept does not mean that regional differences should be neglected. Conversely, the definition of universality should respond to regional differences, primarily in terms of income. Therefore, in most western and central regions, the recent

⁸⁸ Based on the author's prediction, the community concept will last for at least 10 years, beginning from 2006.

⁸⁹ Ministry of Information Industry (MII), *The MII Sets Forth New Goal for the VAP in 2006*, *supra* note 57.

⁹⁰ Yanpeng Du, "Rural Communications during the Course of Transition," *China Telecommunication Trade (Zhong Guo Dian Xin Ye)*, May, 2005, <http://www.cnii.com.cn/20050508/ca297186.htm> (in Chinese).

⁹¹ International Telecommunications Union, *World Telecommunications Development Report 1998—Universal Access*, Geneva: ITU (1998), http://www.itu.int/ITU-D/ict/publications/wtdr_98/index.html (accessed May 25, 2005).

⁹² See also Xia, "Universal Service Policy in China" *supra* note 14.

goal of USOs is probably to ensure every administrative village has at least one working telephone line.⁹³ While this is actually the current focus of universal service efforts, in relatively affluent areas, such as those in eastern China, the USO goal may also include household penetration and Internet diffusion, even though voice grade access should still be the focus. The responsibility of the central government should be limited to only the nationwide provisioning of a basic level of services. Advanced services (such as Internet access) should be the responsibility of the local government. The central government has issued a list of poverty-stricken counties in twelve central and western provinces that need urgent attention in poverty alleviation.⁹⁴ The listed counties coincidentally cover most of the unconnected villages, which the current USO programs should target.

In summary, the implementation of universal service in China in the foreseeable future should be primarily based on the community access concept even though, in the process, associated political dynamics (e.g., the "Three Agrarian Issues" or "Socialist New Villages") may lead to the advocacy of even more ambitious goals. Based on China's condition, a two-phase concept can be identified in defining basic services. The short-term objective is to make voice grade access to PSTN available, either through wireline or wireless, at a reasonable quality and rate to all communities no matter their geographical locations, socio-economic standing, and profitability. The long-run objective should be the promotion of household penetration and the deployment of Internet access.

D. SUPPORTING THE UNIVERSAL SERVICE PROGRAMS: IS USF THE FINAL RESORT?

Support mechanisms, which had been hindering the smooth execution of the VAP in the first phase (i.e., 2004-2005), should be reliable, whether obtained from external sources (e.g., general finance, industry taxation) or the firm's internal subsidy (but not cross-subsidy). Ideally, universal service programs should be financed explicitly, funded broadly, targeted narrowly, competitively neutral,

⁹³ Ministry of Information Industry (MII), Notice, *Rural Communications Universal Service*, *supra* note 54.

⁹⁴ The most recent version of the list has been expanded to include more provinces. See, e.g., State Council Leading Group Office of Poverty Alleviation and Development, *List of Poverty-Stricken Counties Determined by Provinces*, http://www.cpad.org.cn/data/2006/0303/article_312.htm (accessed Nov. 23, 2006).

provide the least distortion, and be served most efficiently.⁹⁵ Other criteria for evaluating a support mechanism may include transparency, equity, efficiency, cost effectiveness, flexibility, incentive compatibility, predictability, accountability, and costs of implementation and administration.⁹⁶ In China, however, a standard market-driven approach is destined to be configured in such a way that the following environmental factors must be taken into account.

- *First*, market reform has been a trend. The telecom industry is now undergoing a transition toward competition where universal service is not supposed to impede, but rather expedite, the transitional process.
- *Second*, governance and the system of ownership are characterized by state dominance that would inevitably exert substantial influence on the formulation of the USO regime particularly through support mechanisms.
- *Third*, China now faces an obligation to honor its WTO commitment and observe WTO rules and practice. This means that policies should embody the idea of consistency and neutrality in terms of investment, technology, and competition.
- *Fourth*, an explicitly defined competition policy in telecommunications is still elusive in China. The current *Telecommunications Regulations* are vague in terms of policy objectives, implementation strategy, and governance. China also does not have a general competition law.
- *Fifth*, historical legacies inherited during and after the monopoly era also poses a constraint on the current universal service regime. During the process

⁹⁵ See also Economides, "The Telecommunications Act of 1996 and Its Impact," *supra* note 74, at 19-20.

⁹⁶ OECD, *Universal Service Obligations*, *supra* note 76.

of telecom reform, carriers committed a certain amount of investment to building rural infrastructure that now has to be maintained and operated under the emerging regime.

In an era where the economy is being liberalized and the political regime remains untouched, China should follow its own path in considering a support mechanism. In doing so, certain criteria need to be considered:

- *First*, the regime has to demonstrate continuity and sustainability, which should accommodate the smooth transition from the current regime toward the emerging one, and ensure a predictable flow of funding on a regular basis.
- *Second*, the regime has to demonstrate attributes of fairness and transparency, particularly when private and foreign participation in the sector become realistically substantial.
- *Third*, the regime should be efficiency-friendly, which means it should not cause much distortion in terms of investment and choice of technology.
- *Fourth, and last*, the regime should incur low enforcement cost, which has become one of the most controversial issues in contemporary China.

There are normally two sources of contribution, i.e., the general taxation system and levies on the industry. Although generalized public sources may contribute more to the goal of equity and cause the least distortion, some pragmatic factors seem to nullify the idea of taking recourse to the general public for rural access in China. First, funding of universal service is conventionally regarded as a sector-specific issue. Hence, negative responses from other governmental departments are expected if funds are taken from the general tax revenue.⁹⁷ Second, China is a developing country with a myriad of communities and individuals competing for assistance in one aspect or

⁹⁷ See also Xia, "Universal Service Policy in China," *supra* note 14.

another. It may not make sense to turn to general public resources to fund a universal service. Third, since the telecom sector has long been given priority and privileges over other industries in terms of investment and deployment of new technologies, now would probably be the time for the sector to return the favor to society by simply not soliciting the general taxpayers. These factors, among others, indicate that for the time being there is no sound rationale to solicit from the general public. This is notwithstanding the fact that either general tax sources or levies on the industry are de facto different forms of cross-subsidization.

As a standard norm of universal service administration, the universal service fund (“USF”) has been taken as an ultimate solution by the MII from the early promulgation of the *Telecommunications Regulations* to the recent issuance of the “Suggestions.” One sign of this dates back to 1999 with the establishment of a center by the MII to specifically deal with universal service costs and other policy matters. Government agencies, telecom carriers, and academic researchers all support creating a USF in China. Factors behind their favorable attitudes may include the following:

- Regulators favor the expected bureaucratic expansion that a USF will likely entail;⁹⁸
- Because a USF has become a standard mechanism, international experience is available to be learned from and applied.
- Incumbent carriers are inclined to delay action due to piled-up-losses whereas a USF appears to be the most anticipatable funding opportunity in the foreseeable future.

Nevertheless, the establishment of a USF in China would involve substantial regulatory cost due to cost allocation and duplicate regulatory efforts. This is particularly true in the presence of

⁹⁸ Government agencies at various levels have developed their own interests in China, which sometimes make administrative reorganization one of the toughest tasks when certain interest groups are to be harmed because of this. Harmed parties or individuals can sometimes go so far as resorting to violence to impede the process. See, e.g., SINA, “Two Deputy Municipal Party Secretaries in Hubei Province Who Organized Assault Against Local Party and Executive Organizations Were Investigated and Punished,” February, 25, 2006, <http://news.sina.com.cn/c/2006-02-25/02008296002s.shtml> (accessed May 29, 2006).

information asymmetry where unattended agency problems can sometimes lead to a high shadow price of public funds. Meanwhile, universal service cost allocation has been proven by many countries to be an arduous task that relies heavily on sophisticated engineering modeling as well as collaborations from the carriers that provide cost information. Policy-makers are therefore facing a trade-off between regulatory convenience as a result of expanded organization and high regulatory cost, an even tougher issue given China's current situation.

IV. AN OPTION FOR CHINA: A "NON-SUBSIDY" APPROACH

As an alternative institutional arrangement to a USF regime, a "non-subsidy" approach without the establishment of any kind of fund could be followed by China. This would result in the distribution of USOs directly to incumbent carriers, based on identifiable variables such as network coverage and revenue, but without monetary subsidy. The rationale of this "non-subsidy" approach could include the following:

- *First*, not only has genuine competition remained unestablished in this industry, but it is uncertain when competition will eventually develop. This seems to be a long way away for the transition of China's economy, and the ICT sector in particular, which is far from being market-driven. (*Certainty*)
- *Second*, since the ownership structure of the incumbent carriers is without exception under government-domination, "non-subsidy" policy actually means majority subsidy from the state-ownership part. As for institutional investors and private shareholders, this policy is not supposed to cause much distortion as long as the policy is expressly defined beforehand. (*Transparency, Consistency*)
- *Third*, incumbent carriers receive benefits in providing rural services through positive network and brand effect. Besides, this sector used to receive more privileged treatment over other industries in terms of supportive taxation policy and government funding. (*Fairness*)

- *Fourth*, all carriers are vertically integrated firms that operate at all layers of the industry including access, transmission, application, and content. Even if in the foreseeable future the ownership structure should become more fragmented for any reason (e.g., the introduction of more aggressive competition policy), USOs can still be easily identified with physical networks. This means a transition between the new and old regimes can be seamless, which is also the case with the VAP. (*Sustainability, Consistency*)
- *Fifth*, this policy is cost-effective. It can save a substantial amount of money from cost allocation, administration, and other regulatory efforts. By comparison, however, the USF regime can be more vulnerable to corruption or other types of opportunistic behaviors. (*Low regulatory and agency cost*)

Under “non-subsidy” policy carriers can be offered the option to freely transfer their obligations with each other based on free industrial negotiations. In this way, high-cost firms may choose to transfer their obligations to firms with relatively lower costs. For the time being, a “non-subsidy” approach can also be promulgated as a formal rule for the ongoing VAP before any emerging regulatory regime actually comes out. Through these means an explicit message can be sent to the players in their decision-making so as to avoid carriers pleading funding deficiency in order to compromise their obligations. This arrangement can be compatible with the current industry configuration, forthcoming industry restructuring, and the future market-driven ICT industry. The negative side of this policy, if any, lies in the fact that it is probably not competitively neutral when the industry is subject to substantial competition from a new entry. If this is really the case, an asymmetric USO regulation needs to be considered to protect effective entry.

While a “non-subsidy” policy partially addresses the issues of consistency and sustainability, the regime still cannot be sustainable in the absence of effective regulatory governance. At present, regulatory independence is often taken as a safeguard for effective regulation. In its WTO accession protocol, China certified the Fourth Protocol to the General Agreement on Trade in Services (“GATS”) and its Reference

Paper. The Paper stipulates that: “[t]he regulatory body is separate from, and not accountable to, any supplier of basic telecommunications services. The decisions of and the procedures used by regulators shall be impartial with respect to all market participants.”⁹⁹ Whereas the term “independence” is subject to various interpretations, organizational autonomy and arm’s length relationship with the regulated industry, political authorities, as well as other private interests are commonly agreed upon. Based on current political, legal, and economic configurations in China, regulatory independence is subject to a number of restraints, which creates the following concerns:

- Can the enforcement of a telecom law without a general competition policy in place really lead to effective regulation?
- Can genuine regulatory independence possibly surface amid the current interweaving of complex political and interpersonal relationships?”
- Will genuine and effective competition among operators eventually develop before any major changes are made to corporate governance of the firms and political governance of the state?

The allegedly forthcoming telecom law is supposedly a delicate balance between general principles of competition policy, WTO commitment and political goals.¹⁰⁰ However, it probably will make no difference what specific form the regulatory body will take before any major reform takes place in the political regime. Therefore, the more pragmatic initiative probably lies in shifting regulatory reform efforts to focus on the enhancement and elevation of professionalism and operational efficiency of the incumbent regulator—MII, for which reinforcing the rule of law is of critical significance. In addition, regulatory convergence should be arranged when the timing is mature. With no further unexpected major regulatory governance restructuring

⁹⁹ World Trade Organization, *WTO Reference Paper on Basic Telecommunications* (Geneva: WTP Forum, 1998), <http://www.itu.int/newsarchive/press/WTPF98/WTORefpaper.html> (accessed Dec. 29, 2006).

¹⁰⁰ See also Jun Xia, “Competition Policy in Telecommunications in the 21st Century” (in Chinese), 18(2) *World Telecommunications* (2005).

in sight, investors, consumers, and carriers (including universal service providers) can enjoy more certainty when making business decisions. As integral part of overall regulatory regime, USO policy itself also requires an integrated regime. To ensure transparency and sustainability, a number of vertical and horizontal relations need to be explicitly re-defined; and the Chinese government needs to be clear about its own long-run guiding objectives of universal service. Since no ready model can be borrowed from elsewhere in this regard, China faces the challenge of creating its own model. In this case, a "joint-committee" on universal service with members from relevant government agencies at central and local levels as well as carriers' central offices should be formed as an affiliate to the central regulator to coordinate universal service activities. In so doing, however, China can learn from the United States experience in dealing with central-local relations on universal service. While the road towards the eventual integrated regime may be long, the daily operation of the present ongoing VAP can be delegated to relevant divisions of the incumbent central regulator (i.e., MII) and its local counterparts (i.e., PCBs), meaning no separate entity is needed at this stage either.

The successful implementation of relatively independent regulation in China also relies on addressing agency problems. It is particularly significant to expressly re-define the government's role in the emerging universal service regime. Agency problems can lead to regulatory capture by interest groups, particularly when a "revolving door" exists, which has been a pervasive phenomenon in highly regulated industries¹⁰¹ such as telecommunications in China.

Although the central government is expected to play a leading role in USO policy-making, substantial participation from local governments is also crucial. Not only do local governments have the role of stakeholders (e.g., local development, icon projects), but they are also in a better position to leverage local resources (e.g., supportive taxation policy). The imperative of local participation also comes into play when taking into account how local areas may differ in natural conditions and socio-economic development. With tailored knowledge and jurisdiction, local governments may complement the central government's capacities. Through "joint-committee," both the central and local governments' roles in universal service can be integrated into one unified platform.

¹⁰¹ See, e.g., George Stigler "The Theory of Economic Regulation," in the *Bell Journal of Economics and Management Science*, ed. Paul W. MacAvoy (Lancaster, PA: Lancaster Press Inc., 1971), 3-21; Sam Peltzman, "Toward a More General Theory of Regulation," *Journal of Law and Economics* 19 (1976): 211.

V. CONCLUSION

The Chinese telecom sector has witnessed an exponential expansion and growth over the last two decades, particularly since deregulation in 1994. The deregulation resulted in a swift transition of some ICT products, such as the telephone, going from a luxury to a necessity for most people in China. However, basic telephone service remains unavailable and inaccessible to a portion of the population, particularly those in rural areas. This rural inaccessibility is emerging as a serious challenge for China's government in its effort to bring the sector and the economy to a new level of reform, one compatible with the goal of a harmonious society and the Party's recent ideology of building "Socialist New Villages" (part of which includes properly addressing the "Three Agrarian Issues").

To address this pressing issue, China's government launched the VAP in 2004 as an interim policy solution, according to which rural connection tasks are distributed among incumbent carriers based on revenue and geographical adjacency. The VAP regime serves short-term goals but comes with its own problems, particularly due to its unsustainable and inconsistent nature. These problems specifically translate into insufficient support mechanisms and ineffective regulatory governance which have proven to be hindering the progress of universal service efforts in China. This necessitates a thorough reexamination of the current universal service regulatory regime, particularly when it comes to policy issues regarding the support mechanisms, regulatory governance, and the definition of the government's role.

Based on an investigation of the problems and difficulties encountered by China's government with the ongoing VAP, this paper offers suggestions on sound and reliable support mechanisms and regulatory governance given China's unique institutional endowment. The following conclusions are drawn:

- The uniqueness of China's circumstances requires a unique solution to the USO issue;
- While a USF has been a standard and successful mechanism elsewhere in the world, it is probably currently unsuitable for China because of the high perceived shadow price of public funds as well as serious agency problems;

- Nevertheless, a regulatory approach featuring a “non-subsidy” policy can serve both interim and long-term goals when agency problems are properly addressed in a well-designed governance structure based on a “joint-committee” with members from various stakeholders.

